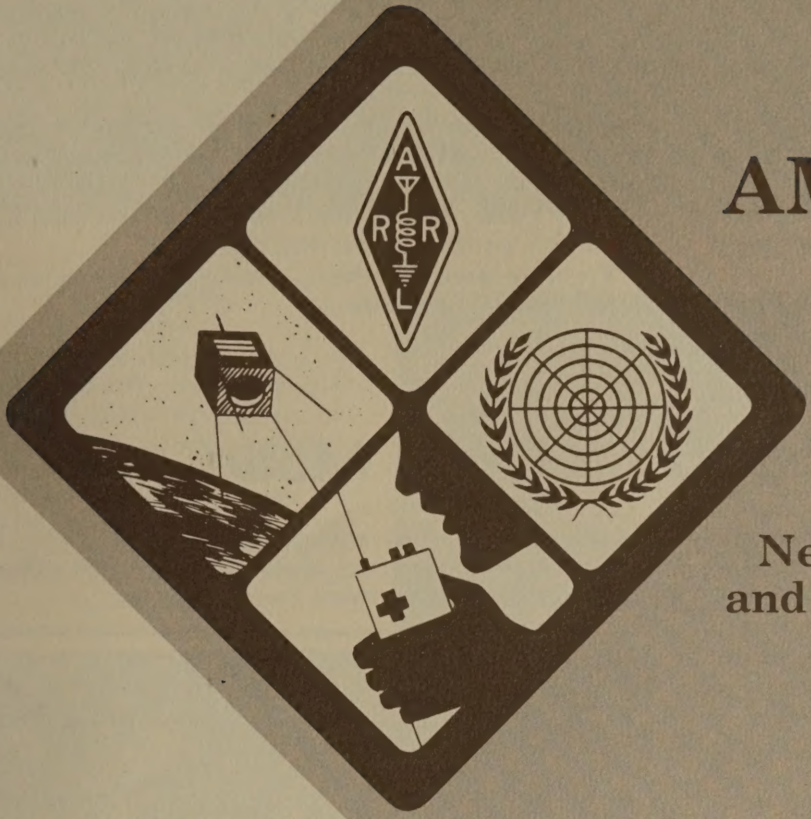


AMATEURADIO

News of the Amateur Radio
and Amateur Satellite Services

Volume 2 Number 12

A Publication of the American Radio Relay League, Inc. December 1981

Near Tragedy At Christmas Sparks Birth Of Sight-Saving Amateur Radio Network

IOWA CITY, Iowa (AP) — It was around Christmas in 1962, and word crackled over the amateur airwaves from a blind ham radio operator in Oklahoma that a child in his city had severely burned an eye and was in dire need of a corneal transplant. The search for a donor began.

Through the persistence of a handful of ham operators and a little bit of luck, an eye was located and the child's eyesight was saved. A sight-saving network was also born.

Since that auspicious beginning nearly 19 years ago, Dr. Alson Braley's Eye Bank Network has been the ears for making more than 10,000 connections between doctors and corneal transplant patients.

Braley is a retired ophthalmologist and dedicated ham radio operator whose vocation and avocation led him to create the network, which now has amateur operators in 60 cities across the country.

Twice a day they meet via the airwaves to exchange information on where eyes are needed for corneal transplants and where those eyes are available from donors.

"All we do is connect this eye bank with that eye bank," Braley says. "We make the contact. The eye bank works out the details."

An eye bank calls its local ham operator if it needs or has an available eye for a transplant. The message gets passed along through the amateur network.

The network was born of Braley's frustration at not being able to locate corneas for patients who needed transplants, when he was practicing medicine.

"I became head of the eye department at the University of Iowa in 1950," says Braley, 75, who was chairman for 17 years. "When I first got there we didn't have an eye bank.

"We got started with the help of the local Lions Club, but one of the biggest problems was when you had an emergency, you didn't always have an eye available.

"I thought we might set up a teletype operation between eye banks, but that looked like it was going to be a very expensive thing."

So Braley, a ham operator from the age of 15, decided to put together a network of fellow hams in cities where eye banks were located.

(Continued next page)

On December 20, 1962, 15 operators in seven cities checked into the network for the first time. The first connection came a short time later when a Chicago eye bank shipped an eye to Oklahoma City. The network has been going strong ever since.

Braley says the network handles only emergency cases, some of which are the result of burns and various other injuries to the eye.

"But the most common is when an ulcer of the cornea breaks," he says. "Then it's a matter of minutes or hours before a patient's sight is lost."

Althought the network was designed to serve eye banks in the U.S., the amateurs have helped send eyes to places such as Paris and Hong Kong.

"But the most exciting one for me personally," says Braley, "involved a fellow from northern Michigan who had only one eye, and he had a perforated corneal ulcer."

At the time, Braley was treating the man at University Hospital. He contacted the other members of the net, who soon located an eye in Indianapolis for his patient.

Braley's wife, Hazel, went to the airport in Cedar Rapids to pick up the sight-saving delivery.

"We were already in the operating room when she got back," Braley said, smiling.

'Be Prepared' Is Radio Club's Motto

While many businesses encourage their employees to gain expertise in emergency medical methods such as cardio-pulmonary resuscitation, members of the 3M Scotch Amateur Radio Club have taken emergency preparedness a step farther on their own. They are trained to provide radio communications in times of disaster.

The club, started in 1969, operates out of a facility at Lake Elmo, Minn. Besides communicating locally, the club's 65 members have been in contact with other ham radio operators around the world. In some cases, they have been the only contact.

In 1969, for instance, when Hurricane David ravaged much of the Caribbean, club members were able to establish contact with the 3M plant in Santo Domingo, Dominican Republic, after conventional means of communication on the island had been knocked out. According to one member, Duane Jabas, a research technologist at 3M, the club was instrumental in helping the main office communicate with the plant to assess damages and coordinate an airlift of supplies.

The club's communication system is mobile enough to go on location to areas needing assistance. But, as in the case of the floods in neighboring South Dakota in 1972, the Scotch hams demonstrated they are just as effective operating from their main base as a relay station for communications systems throughout the country.

In Washington County, Minn., the Scotch ham radio club is the official Red Cross amateur communications station. In this capacity, the club's responsibility varies from substituting for land-based systems during storms when phone and power lines are down, to contacting local police or the Highway Patrol when there is a motorist in need of help.

Last summer the radio group participated in a national emergency preparedness training exercise, sponsored by the American Radio Relay League, the national organization of ham radio operators. During the event, participants test their operating readiness by contacting as many other amateur operators as possible in a 24-hour period. Jabas said the Scotch hams made more than 600 radio contacts with amateurs in 46 states, Central and South America and Canada.

For Jabas, though, the thrill of being a ham radio operator does not end with helping others in need.

"The thrill for me is picking up the microphone, placing a general call to anyone who can hear me, and getting a response from another ham in an obscure country thousands of miles away," he says.

Peter Roussel, left, may be known on Capitol Hill as the new deputy press secretary at the White House, but to about 400,000 ham radio operators in the U.S. he's K5JCC, his amateur callsign. A ham radio enthusiast since the age of 13, Roussel says, "Hams provide a very valuable service. They are of great assistance during hurricanes and other disasters where communications have broken down." Here he meets with Perry Williams, Washington area coordinator for the American Radio Relay League, the national association of ham radio operators.

WANT TO KNOW MORE ABOUT THE AMATEUR RADIO SERVICE? Contact Perry Williams, ARRL's Washington Area Coordinator, and arrange for a personal visit by calling (202) 296-9107.

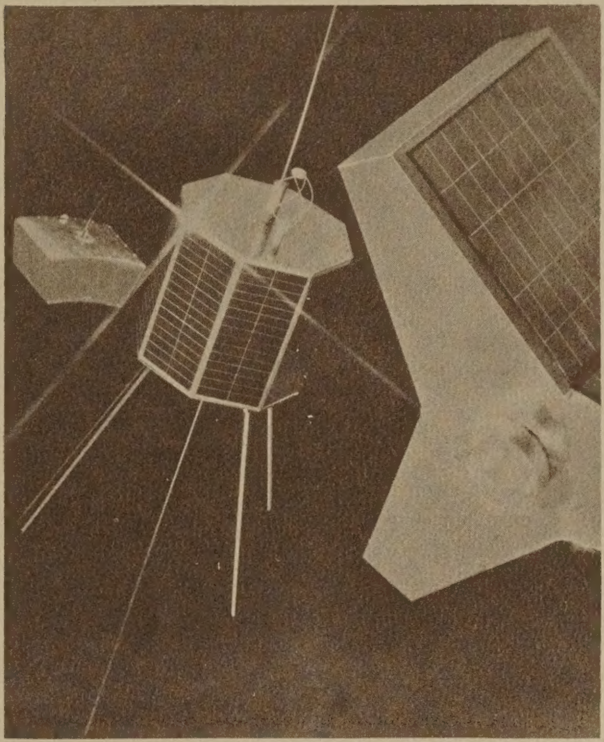
Amateur Satellites Are Nothing New For Radio Hams

by Dave Finley
Miami Herald

The first private citizens to actively enter the space age were Amateur Radio operators, or "hams." Just four years after Sputnik, on December 12, 1961, a 10-pound satellite built in garages and home workshops — from materials costing less than $65 — was given a piggyback ride into orbit aboard an Air Force Thor-Agena rocket.

Called OSCAR 1, the tiny spacecraft beamed out the word "hi" in Morse code as it circled the Earth. Before its batteries ran out three weeks later, more than 5000 amateurs in 28 countries had reported receiving its faint signal.

That satellite and its successors have brought space into the homes of thousands of radio enthusiasts worldwide. While satellites have become commonplace to the public, the OSCARs give hams the chance to participate in science and fire their enthusiasm in a way no textbook or classroom could match.



From left to right: OSCAR 1, the world's first non-governmental satellite; OSCAR 7, launched in 1974 and still operating; and a prototype of OSCAR 10, now being readied for launch late next year.

Almost as soon as the Russians orbited the first satellite in 1957, some hams began to think about putting their hobby into space. By 1959, a group had formed Project OSCAR (for Orbiting Satellite Carrying Amateur Radio) and obtained the backing of the American Radio Relay League (ARRL), this country's principal ham radio organization.

After extensive negotiations with the Air Force, they were allowed to hitch a free ride on the missile launching a Discover satellite. All subsequent OSCARs have ridden free into space along with commercial or military satellites.

On June 2, 1962, OSCAR 2, essentially a copy of its predecessor, was launched and sent its message for 18 days before re-entering the atmosphere and burning up.

Three years later, hams made radio history with OSCAR 3, the world's first free-access communications satellite. It did not merely beam a signal to Earth — it could receive a ham's transmission, shift it to another frequency, amplify it, and retransmit it to the ground. With it, hams in 16 countries made two-way contacts spanning oceans and continents during the satellite's two-week life.

Launched on March 9, 1965, OSCAR 3 preceded the first commercial communications satellite, Early Bird.

OSCAR 4 was misfired into an erratic orbit later that same year, and was of limited use, but one of the few contacts made through it was the first direct satellite communication between the U.S. and the Soviet Union.

In 1969, the non-profit Radio Amateur Satellite Corporation (AMSAT) was formed. Its first project was an international venture under which OSCAR 5 was built by students at the University of Melbourne, directed by the Wireless Institute of Australia.

Launched on January 23, 1970, OSCAR 5 was the first amateur satellite to be controlled by commands from the ground. In addition to transmitters in the very high frequency region, which its predecessors had used, it had a beacon transmitter in the regular shortwave region, where most amateurs operate. This enabled thousands more amateurs to participate in the program.

OSCAR 6 was launched in 1972 and, among other achievements, was the first satellite to be used by an amateur operating from his car.

OSCARs 7 and 8 went into orbit in 1974 and 1978 and are still operating. The Soviet Union put two ham satellites into orbit in 1978, but neither is still operating.

On May 23, 1980, the amateur satellite program was dealt a temporary setback. One of its spacecraft was lost when the European Space Agency's Ariane rocket on which it was riding malfunctioned and crashed into the Atlantic Ocean minutes after launch. (The amateur space program bounced back, however, when OSCAR 9, which was built by radio amateurs at the University of Surrey, England, was successfully launched into orbit on October 6, 1981.)

The ham satellites have been used for many experiments, not only on the scientific aspects of radio but also on new applications of space communications. The latter includes transmissions of electrocardiograms by satellite so that doctors could analyze illnesses of faraway patients, and tests of the ability of a satellite to locate a downed aircraft's emergency radio beacon.

In the scientific field, the amateur spacecraft have yielded unexpected information on the atmospheric propagation of radio waves. At times, the satellite signals have far greater range than predicted.

Bernard Glassmeyer, operations manager for OSCAR 8 at the ARRL's headquarters in Newington, Conn., points to experiments in using the satellite transmissions to determine the spacecraft's distance from the ground, to tracking experiments, and even to experiments which aim at calculating the albedo, or reflectivity, of Earth.

Even so, Glassmeyer insists, the prime function of the OSCAR satellites has been educational — to give ordinary people the chance to work with space hardware and explore what has become a new frontier for Amateur Radio.

(Reprinted with permission from *The Miami Herald*)

ALONG LEAGUE LINES

On September 25, 1981, Senate Bill 929 was adopted by the U.S. Senate without dissent. Formally entitled the Amateur Radio Services and Private Land Mobile and Fixed Services Act of 1981, S. 929 is now before the House of Representatives.

Most of S. 929 is non-controversial. The Amateur Radio provisions of the bill would provide for growth of the Amateur Radio Service while at the same time help streamline the workload of the FCC.

There is one provision, however, that has raised the hackles of the Consumer Electronics Group of the Electronics Industries Association (EIA/CEG): the provision that would give the FCC discretionary authority to set minimum standards for audio and visual equipment to reduce their susceptibility to interference from radio frequency energy.

When experiencing radio frequency interference to your television, stereo or other electronic devices, it is easy to jump to the conclusion that the station from which the interfering signal is coming must be the cause of the problem. The fact is that in the vast majority of cases, the interference is cause by the *receiving* equipment, because it is lacking the necessary filtering or shielding to prevent it from intercepting signals it is not intended to receive.

The EIA/CEG asserts that this provision of S. 929 is not necessary because manufacturers are voluntarily doing what is needed to make their electronics products interference proof. This argument is belied, however, by Sen. Goldwater's remarks when he introduced S. 929: ". . . I am reluctant to take this step to extend FCC jurisdiction over a matter that has been left to the marketplace. But after repeated unsuccessful efforts to obtain the electronics industries' voluntary cooperation, I believe we must rely on the FCC for guidance on a resolution of this issue . . ."

The same industry representative says that the interference problem has been exaggerated, that there aren't enough consumer complaints to justify legislation. Yet, a recent FCC study (on television interference only) revealed that only one in eight problems with interference was actually reported. Last year, there were more than 80,000 known incidences of RFI, which translates into at least 560,000 consumers with defective electronics products. FCC estimates put this figure in the millions.

For the past thirty years, the problem of RFI has been left to the marketplace to be resolved, with little apparent success. Isn't that time enough?

American Radio Relay League, Inc.
225 Main Street
Newington, Connecticut 06111

Since 1914, in the public interest

NON-PROFIT ORGANIZATION
U.S. POSTAGE
PAID
Hartford, Conn.
Permit 2929

AMATEURADIO is published monthly by the Public Information Office of the American Radio Relay League,
225 Main Street,
Newington, Connecticut 06111;
telephone (203) 666-1541.

Harry J. Dannals
President

Richard L. Baldwin
General Manager

Andrew J. Tripp
Editor